disproportionate share of lines. The absence of collocation in a small office could well indicate lack of interest by competitors.

Dr. Kelley's proposed collocation measure is deficient in another way. Consider the possibility of a predominantly facilities-based competitor serving a particular area—e.g., a major MSA. Such a competitor would not need to collocate in many wire centers, yet it would provide competition to the incumbent in the areas it served. In fact, in Seattle and Phoenix, CLECs are providing competitive high capacity fiber facilities, as we described in our earlier filings, despite the fact that, according to U S WEST, they have collocated and are providing competitive transport in far fewer than 90 percent of its offices in those two MSAs. Clearly, Dr. Kelley's collocation measures are irrelevant to the development of high capacity competition and would serve only to delay indefinitely the flexibility U S WEST requires to deliver effectively to customers the benefits of competition.

IV. THE COSTS OF RETAINING DOMINANT-FIRM REGULATION OF U S WEST ARE HIGH

Dr. Kelley asserts that the dangers of relaxed regulation outweigh the benefits (pp. 29-31). This conclusion springs from two premises that we have already refuted in this paper—namely, that (1) barriers to CLEC entry into high capacity markets are high and (2) ILECs already have all the flexibility they need. As for the second assumption, we need only observe that he has completely ignored the specific benefits of relaxed regulation that the FCC has previously recognized in other nondominance proceedings.

In its AT&T nondominance order (e.g., par. 32), the Commission describes graphically the high social costs of continued asymmetrical regulation: (1) the longer tariff notices imposed on the putatively dominant carrier dampened its incentives to innovate, because rivals could respond to its innovations even before it could actually offer them; (2) these filing requirements also discouraged it from reducing prices; (3) the dominant firm's competitors could use the regulatory process to delay and undermine its initiatives; and (4) regulation imposed administrative costs on both the regulated firm and the FCC.

The dominant firm regulation at issue in these proceedings entails the same kinds of costs and distortions of competition—the latter compounded in the present instance by the ability of the CLECs to offer complete bundles of services, including interLATA, while the RBOCs cannot respond in kind until such time as their 271 applications are successful. Ironically, these applications are being held up pending demonstration that their local markets are sufficiently open to competition!

The upgrading and modernization of the switched public network and the fullest exploitation of its capability of offering a variety of sophisticated and innovative services—which are the central goals of the Telecommunications Act of 1996—depend not just on freeing the telephone companies and all others from restrictions and handicaps on their ability to do so; it also requires offering all parties the full, undiluted incentives of a free market system to undertake the requisite, typically risky investments.

Those incentives are of two kinds. The first is the stimulus of competition itself. The strongest case for substituting the discipline of competition for that of regulation is the superior ability of the former to exert pressures on all producers to be efficient and innovative, if they are to survive, let alone prosper. Outstanding, unequivocal illustrations are the wholesale adoption of hub and spoke operations and the development of computerized reservations systems by the airlines after their deregulation, and the widespread adoption of just-in-time inventory systems made possible only by the freedom of truckers, conferred by their deregulation, to enter into binding contracts with penalties for failure to perform according to stipulated standards.

The second is the self-interest of the telephone companies, freed from continuing restrictions on the services they are permitted to offer. If they are to undertake the risks of investments in innovation, they must see the prospect of retaining the profits of the ones that turn out successfully, symmetrically with their bearing the full costs of the failures. This requires genuine deregulation.

Particularly during the next several years, when competitors in markets formerly protected by regulation will attempt to enter each other's domains in innovative, often

unpredictable ways, it is essential that the second of these incentives not be weakened in a misguided effort to strengthen the first. Attempts to micromanage the process of deregulation, we have found in other industries, are more likely to produce distortions than actually to encourage efficient competition.[21] Ultimately, both incentive systems require the shrinking of regulation and of all such regulatory restrictions to the absolute minimum and entrusting protection of the public to deregulated competition—subject, as always, to the constraints of the antitrust laws.[22]

V. CONCLUSION

In our previous filings on behalf of U S WEST, we demonstrated that the markets for high-capacity services in the Phoenix and Seattle areas fully exhibit the indicia of competition previously considered by the FCC in determining whether telecommunications carriers are no longer dominant. Despite Dr. Kelley's assertions to the contrary, all the evidence is of vigorous, intensifying competition in the offer of high-capacity services, which strongly suggests that if the FCC grants U S WEST's petitions, there is virtually no likelihood that it will ever regain a dominant position such as would call for reregulation of this market— the relevant historical precedents demonstrate that regulators have little to fear from premature relaxation of regulation in such situations.

Competition itself, without dominant firm regulation, is sufficient to deny U S WEST the ability to impose anticompetitive prices and other conditions in this rapidly expanding, competitively turbulent market. In these circumstances, the costs of continued dominant firm regulation in this market clearly exceed whatever benefits it could possibly confer.

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[21] Alfred E. Kahn, "Applications of Economics to an Imperfect World," the Richard T. Ely lecture, *The American Economic Review, Papers and Proceedings*, Vol. 69, No. 2, May 1979, pp. 1-13.

[22] See Kahn, *Letting Go: Deregulating the Process of Deregulation*, Michigan State University Institute of Public Utilities, 1998.

ECONOMIC EVALUATION OF HIGH-CAPACITY COMPETITION IN SEATTLE

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SUMMARY

In accordance with Section 10 of the Telecommunications Act of 1996, U S WEST is asking the Federal Communications Commission to forbear from regulating it as a dominant carrier in its sale of high-capacity services in the Seattle metropolitan area. In support of its Petition the Company has asked us to assess its market power in the offer of these services in that area. In performing this analysis, we rely on information about that market obtained from studies performed by others (Quality Strategies and POWER Engineers), on data provided by the Company, and on our own research on this and related markets.

Following the approach the FCC has previously used to assess market power for other services, we conclude that the market for high-capacity services in the Seattle area fully exhibits the indicia of competition that the Commission has prescribed. In particular, (1) U S WEST has a diminishing market share—indeed, it serves only 20 percent of the retail market—and is providing only one-third of the facilities that serve new demand; (2) customers are highly sensitive to price and other service characteristics; (3) U S WEST's competitors have the ability to expand their capacity sufficiently to take over a major share of the market it currently serves and there are minimal barriers to entry; and (4) U S WEST's size does not confer on it an insurmountable competitive advantage.

December 22, 1998

U S WEST's lack of market power signifies that competition itself, without dominant firm regulation, is sufficient to limit its ability to impose anticompetitive prices and other conditions of service. In light of these developments, the costs of maintaining dominant firm regulation in this market clearly exceed whatever benefits continued regulation could possibly confer.

I. INTRODUCTION

U S WEST Communications is, in accordance with Section 10 of the Telecommunications Act of 1996, asking the Federal Communications Commission to forebear from regulating it as a dominant carrier in its sale of high-capacity services in the Seattle metropolitan area. In seeking nondominant status for these services, the Company argues that competitive entry, along with the competition to which it is already subject, is sufficient to constrain its ability to charge prices above competitive levels and, therefore, the costs of continued dominant carrier regulation far outweigh the benefits.

U S WEST has asked us to assess its market power in the offer of these services in this market. In performing this analysis, we rely on information about the Seattle market obtained from studies performed by others (Quality Strategies and POWER Engineers), on data provided by the Company, and on our own research on this and related markets. We follow the framework the FCC has used in determining nondominant status in other situations.[1] We conclude that competition in this particular market is sufficiently strong to constrain U S

WEST's ability to control prices and other terms and conditions of service, and that in these circumstances continuing dominant-firm regulation of its high-capacity services would be anti-competitive and injurious to consumers.

II. THE FCC'S APPROACH TO MARKET POWER ASSESSMENT

The FCC employs standard economic concepts in its assessment of a firm's market power.[2] It first defines the relevant product and geographic market, taking into account both demand and supply substitution. It then determines whether a firm currently regulated as a dominant carrier still possesses monopoly power within that market, by examining four specific measures:[3] (1) market share, (2) demand elasticity, (3) supply elasticity and (4) the cost structure, size and resources of the putatively dominant firm. We proceed to analyze each of these in turn.

A. Market Definition

Services provided to customers with usage sufficiently great to be economically served with high-capacity facilities[4] define the relevant product market.[5] These customers would be

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[1] See, for example, *Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, October 12, 1995 ("AT&T nondominance order") and *Policies and Rules for Alternative Incentive Based Regulation of Comsat Corporation*, IB Docket No. 98-60, April 24, 1998.

[2] Cf., e.g., the methods employed by the antitrust agencies for defining markets when analyzing proposed mergers. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines*, April 2, 1992.

[3] These measures are similar to those described in W.M. Landes and R.A. Posner, "Market Power in Antitrust Cases," *Harvard Law Review*, 1981.

[4] These include DS-1 or higher capacity facilities.

mid-sized to large business end-users,[6] carriers using high-capacity transport facilities, and resellers. Services provided over lower-capacity facilities are not in the same product market and are not encompassed by the U S WEST petition: in terms of the familiar standard of the *Merger Guidelines*, purchasers of these services would not shift their demands to high-capacity facilities in response to a "small but significant" increase in the price of their current services, because the monthly cost of hooking them up for that kind of access is as much as six to seven times their current basic monthly charges[7]; nor would purchasers of high-capacity facilities, who are willing to pay six to seven times the cost of subscribing to low-capacity, shift their patronage to the latter service in the mirror image situation. Because, for this reason, high-capacity access to large users and low-capacity access to small users are not substitutable on the demand side, the two are in separate product markets.[8]

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[5] Over ten years ago, one of us applied a similar analysis to conclude that high capacity services were competitive in New York City. J.A. Hausman, T.J. Tardiff, and H. Ware, "Competition in Telecommunications for Large Users in New York," in National Economic Research Associates, *Telecommunications in a Competitive Environment,* Proceeding of the Third Biennial Telecommunications Conference, Scottsdale, Arizona, April 1989, pp. 1-19. Our study was based on testimony presented to the New York Public Service Commission. At the conclusion of that case, the Commission ordered that, with the implementation of collocation and the unbundling of switching and transport, New York Telephone be granted a wide range of pricing flexibility—the ability to raise rates by 25 percent annually and to lower them to incremental cost—for its high capacity dedicated services. New York Public Service Commission, Proceeding on Motion of the Commission to Review Regulatory Policies for Segments of the Telecommunications Industry Subject to Competition, Case 29469, Opinion No. 89-12, May 16, 1989. While New York was the first city in which local exchange competition took root, competition is more prevalent in Seattle today than it was in New York when we performed our study.

[6] For ultimate customers, the distinction between mid to large businesses and smaller users corresponds roughly to locations with enough demand to justify a PBX.

[7] U S WEST's current price for a DS-1 facility is about $260 per month.

[8] *Horizontal Merger Guidelines,* Section 1.11.

In terms of supply substitutability, the market clearly embraces all local exchange companies, incumbent and competitive, as well as competitive access providers. There seems no reason to doubt that all of them are capable of providing high-capacity service.

A practical delineation of the geographic scope of the market for high-capacity facilities from the supply side is the metropolitan area. New entrants often announce the availability of their services on this basis. In addition, this tends to be the area within which a provider can expand in a timely fashion to offer services to a growing number of locations. For this particular examination, POWER Engineers (PEI) have shown that competitive local exchange carriers in Seattle can economically expand to serve almost 60 percent of the locations of U S WEST's present high-capacity customers within two years.[9]

The fact that the relevant product market is narrower than the all-local-exchange-services definition proffered by some observers is richly illustrated by the fact that competition has almost universally shunned the residential market and concentrated on the business market—and in particular, service to large businesses in concentrated metropolitan areas—a fact so widely proclaimed—and deplored—it requires no documentation here. As AT&T clearly proclaimed upon completion of its recent acquisition of Teleport Communications,

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[9] POWER Engineers, *Seattle Forebearance Study*, Prepared for U S WEST, December 16, 1998. Specifically, PEI estimated the cost of expanding CLEC networks to serve all U S WEST locations within 9,000 feet of those networks. These locations account for approximately 97 percent of all U S WEST's current high capacity demand in the Seattle area.

Demand tends likewise to be location-specific. Although the size of the consumer base in the several metropolitan areas of the country (indeed, the world) tends to be responsive to, among other things, the availability and cost of high-tech telecommunications facilities, we would not contend that this source of demand elasticity at any particular location sufficiently constrains possible monopoly power at that location to justify broadening the definition of the market to include suppliers of comparable services elsewhere: we accept the obligation to demonstrate that competitive sources of supply must be sufficiently available, both actually and potentially, in Seattle itself to justify our support for the U S WEST petition.

which greatly strengthened its potential market position in the offer of exchange access services in Seattle and elsewhere:

> 'Completion of this merger accelerates our entry into the $21 billion business local service market because we're reducing our dependence on the Bell Companies for direct connections to businesses,' said AT&T Chairman C. Michael Armstrong. ... 'We're giving customers simplicity, convenience and choice. It's one-stop shopping for local and long-distance service, just for starters,' he said.[10]

Manifestly AT&T views business local services as separate from residential.[11] Since TCG's high-capacity fiber optic network is clearly capable of supplying both "low-capacity" and high-capacity services to that business market, our further delimitation of the relevant market in this case confining it to the latter services was justified not by supply-side considerations but by the non-substitutability of low- and high-capacity services on the demand side.

B. Market Power Assessment

In this section, we undertake the four assessments performed by the FCC.

1. Market Share

a. Measuring Market Shares: Dollar Sales or Physical Volume?

The objective in calculating the market shares of challengers of a dominant or one-dominant incumbent is to assess their competitive significance. An initial question is whether

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[10] "AT&T Completes TCG Merger; TCG Now Core of AT&T Local Services Network Unit," AT&T News Release, July 23, 1998, emphasis added. The Release went on to describe how the TCG acquisition facilitates its offer of Digital Link service, an arrangement that employs high capacity links to business customers.

[11] Similarly, MCI WorldCom, following approval of its merger, recently announced a marketing initiative that targets offerings to *business* customers that combine local, long-distance, voice, and data services for calls on its network. "MCI WorldCom Sets Major Marketing Plan for Business Clients," *Wall Street Journal*, September 29, 1998.

that is more accurately reflected in their relative dollar sales or physical volumes.

The *Horizontal Merger Guidelines* sets forth the respective bases for using the one or the other:

> Market shares will be calculated using the best indicator of firms' future competitive significance. Dollar sales or shipments generally will be used if firms are distinguished primarily by differentiation of their products. Unit sales generally will be used if firms are distinguished primarily on the basis of their relative advantages in serving different buyers or groups of buyers. Physical capacity or reserves generally will be used if it is these measures that most effectively distinguish firms.[12]

Since, in the present instance, the entrants tend to emphasize low price as an entry strategy, it might appear that this reflects, in effect, the "differentiation of their products" that the *Merger Guidelines* envision as calling for use of dollar sales. Against this inference, there are several countervailing considerations.

First, the sales in question are, typically, of services that are not differentiated in any meaningful sense. Modern telecommunications networks are distinguished most fundamentally by their physical ability to transmit information; and that, ultimately, is what will be of primary value to large, well-informed buyers.

Second, as these entrants become—and have become—established, the low prices that they use to break into the market will become of disappearing importance.

Finally, Landes and Posner make a reasonable argument that in calculating the market share of an assertedly dominant firm, the denominator should be composed of its output plus the total physical capacity of its challengers, not their actual output:

> ...the sum of the capacity, or potential output, of competitors and the current

[12] *Horizontal Merger Guidelines*, Section 1.41.

> output of the firm in question should be the denominator in computing the firm's market share. The greater the difference between capacity and current output, the greater is the supply elasticity of competing firms, and therefore the greater is the constraint that these firms place on a firm that tries to raise price above marginal cost.[13]

The implication of these several considerations, we suggest, is that, if anything, the use of market shares defined in terms of current sales in physical units, without taking into account also the *capacity of the competing providers* of high-capacity service in Seattle, understated their competitive significance.

b. High-capacity market shares in Seattle

According to Quality Strategies,[14] four competitive providers,[15] all of them with regional or national presence, have entered the high-capacity market in Seattle since 1993—MFS-WorldCom, TCG, ELI, and MCIMetro. MFS and TCG are the oldest and largest CLECs in the country. With its recent merger with MCI, MFS-WorldCom has become affiliated with the second largest long-distance carrier. Similarly, AT&T recently completed its acquisition of TCG, one of the two largest national CLECs. These transactions involve the merger of the purchasers of 37 percent of U S WEST's high-capacity services (long-distance carriers purchasing local access) in Seattle *with suppliers that compete directly with it* in providing those services. It would be difficult to conceive of a more substantial consequent diminution of whatever market power U S WEST might previously have enjoyed.

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[13] Landes and Posner, op. cit., p. 949, stress supplied.

[14] High-Capacity Market Study—*Seattle* MSA, Prepared for U S WEST, December 1, 1998.

[15] For purposes of our discussion, we do not distinguish between competitive local exchange carriers (CLECs) and competitive access providers (CAPs).

The Quality Strategies report measured market shares, in volumes measured in DS-1 equivalents, in a number of ways.[16] In terms of overall high-capacity services, U S WEST provides 73 percent of total facilities—whether directly to customers or to other carriers—CLECs the other 27 percent. U S WEST's share is lower than that for facilities provided by itself or resellers to end users (65 percent), but higher for IXC transport (74 percent).

What these still-high market shares conceal is the fact that competitors of U S WEST have already taken over the preponderant share of the retail market—both using U S WEST's facilities and, as we will point out, increasingly using their own. In terms of direct sales to retail end users, U S WEST's share of the high-capacity market is about 20 percent, according to this same study.[17]

In addition to the level of the current market share of competitive providers, recent changes in that share as well as growth in the market overall[18] are germane to the assessment of market power. Both of these strongly suggest that the Seattle high-capacity market is both highly and increasingly competitive. The market overall has been growing recently at about 12 percent annually.[19] Expansion of the CLECs' business has been even more rapid. During the period from the fourth quarter of 1994 to the fourth quarter of 1997, their share of facilities

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[16] Unless otherwise indicated, its estimates are for the fourth quarter of 1997.

[17] A large proportion of U S WEST's high-capacity facilities are provided to other carriers, who then resell the capacity to end use customers. For example, interexchange carriers, such as AT&T, MCI and Sprint, use U S WEST special access facilities when providing certain services to their high-volume customers.

[18] In general, the more rapidly a market is growing, the easier entry is likely to be, other factors being equal. See, for example, G.J. Stigler, *The Theory of Price*, Fourth Edition, New York: McMillan, 1987, pp. 209-210.

[19] This rate of growth would produce a doubling of demand in about 6 years.

provided to end users increased from 20 percent to 35 percent.[20] This means, as a matter of simple arithmetic, that their shares in the *incremental* business in this rapidly growing market must have been much greater than that. According to the Quality Strategies report (p. 9), CLEC facilities are getting 65 percent of the growth in demand of end-users (whether directly or through a reseller), and they are providing 78 percent of the growth in transport with their own facilities.

The strong recent growth in CLEC sales and market share is likely to continue and may even accelerate. While we do not have Company-specific data for Seattle, CLECs expect to more than double their sales nationally in 1998, with the bulk targeted, as heretofore, at business customers. In fact, during the first quarter of 1998, CLECs added absolutely more new business lines in the U.S. than the RBOCs.[21]

A comparison of the Seattle market share information with the situation the FCC considered when it granted AT&T nondominant status for interstate long-distance is informative. The FCC reported a market share of about 60 percent for AT&T in 1993.[22] Over the previous five years it had fallen by fewer than 10 percentage points.[23] While AT&T's revenues were essentially flat over the 1988 to 1993 period, the overall market was growing by

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[20] These growing shares in a growing market of course imply an even higher growth rate for CLEC volumes. Assuming 12 percent annual market growth, CLEC circuits provided to end users grew by about one-third per year between 1994 and 1997.

[21] See statement of Heather Gold, *FCC En Banc on State of Local Competition*, January 29, 1998 and Salomon Smith Barney "CLECs Surpass Bells in Net Business Line Additions for the First Time," May 6, 1998.

[22] AT&T nondominance order, par. 40.

[23] Federal Communications Commission, *Trends in Telephone Service*, February 1998, Table 11.1.

about 5 percent per year and the revenues for carriers other than AT&T at about 15 percent annually.[24]

This comparison of markets at the time of their respective nondominance investigations thus reveals that while U S WEST's current 73 percent market share at the wholesale, facilities level is higher than AT&T's at the time when the FCC found it non-dominant, its share at the retail level is much much lower: we doubt there would be economists prepared to refer to a firm with 20 percent of a retail market as "dominant." Moreover, at both wholesale and retail levels, the shares and the volumes of business of U S WEST competitors are growing at a considerably more rapid rate than were those of AT&T's competitors at that time. Since we believe the consensus of economic opinion would place greater emphasis on changes in market shares over time and shares in incremental business than their absolute levels, we believe the consensus conclusion would be that U S WEST has much the stronger of the two cases for its claim of a lack of market power in the Seattle high-capacity market.[25] In fact, market shares considerably smaller than that of the CLECs in Seattle have been considered competitively significant. For example, in its AT&T nondominance order, the FCC adduced in support of its conclusion (par. 62) the fact that long-distance resellers, with a market share of about 12 percent, could attract new customers sufficiently to constrain AT&T's ability to charge supracompetitive prices. Hubbard and Lehr go even further in concluding that these resellers

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[24] *Ibid.*, Table 11.6.

[25] As we describe below, US WEST's facilities account for 73 percent of DS-1 equivalents in Seattle. Landes and Posner (*ibid.*, p. 950) discuss an example in which a firm with 80 percent share lacked market power. In that case, (1) over the previous decade, the firm's share had fallen from 100 percent to 80 percent and (2) further entry and expansion is relatively easy. These characteristics are exhibited likewise by the high capacity market in Seattle. The reasoning of Landes and Posner would therefore justify the conclusion that U S WEST lacks

had sufficient market presence to discipline AT&T, MCI and Sprint, combined.[26] Of course, the 1996 Telecommunications Act explicitly promotes this form of competition via its mandatory unbundling and resale provisions.

2. Demand Elasticity

In granting nondominant status to AT&T, the FCC observed that the demands of business customers are highly elastic, because they are sophisticated buyers who typically receive and evaluate competing proposals from several vendors.[27] That observation clearly applies at least equally to the segment of the business customer market that purchases high-capacity services and facilities—medium to large businesses and other carriers.

In support of its motion for nondominant status, AT&T submitted an assessment by Professor Michael Porter of the competitiveness of the long-distance market.[28] He found that business customers have considerable negotiating power because of their sophisticated knowledge of telecommunications, their use of network outsourcers and their ability to provide their own networks. These factors are even more powerful in the case of high-capacity services, because among the primary users of these services are other carriers that have both the

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market power in the sale of these services.

[26] Affidavit of R. Glenn Hubbard and William H. Lehr, on behalf of Western Electric Company, Inc., and American Telephone and Telegraph Company, United States District Court for the District of Columbia, Civ. No. 82-0192 (HHG), filed December 5, 1994, Attachment 1: "An Analysis of Competition in U.S. Long-Distance Telephone Service," pp. 5-6. While we have disagreed with Hubbard and Lehr about the adequacy of competition in the long-distance business in protecting small residential purchasers, we have not disagreed at all about the effectiveness of competition in serving large customers and in appraising the role of resellers in that competition.

[27] AT&T nondominance order, par. 65.

[28] Michael E. Porter, "Competition in the Long-Distance Telecommunications Market," September 1993. The AT&T nondominance order, par. 64, cited this study when concluding that demand elasticity considerations supported the conclusion that AT&T is nondominant in long-distance.

incentive and the ability to drive a hard bargain for good prices and service by threatening to go elsewhere. One need look no further than the alliances between the major IXCs and CLECs (such as WorldCom/MCI/MFS, AT&T and TCG) to observe the ability of these buyers to back up demands for good deals by shifting their patronage to their affiliated CLECs.[29]

These factors are further reinforced by the already preponderant share of U S WEST's competitors in the *retail* market. It means that even though they rely heavily on U S WEST to provide the high-capacity facilities that they then resell to ultimate customers—they are not in this market handicapped by the typical inertia of residential customers, their reluctance to drop a familiar, historical supplier and shift to an unfamiliar competitor.

As for the elasticity of substitution between the offerings of U S WEST and its challengers, the rapid growth in the latter companies' share of the business speaks eloquently in support of the expressions of confidence by CLECs, with which the trade press abounds[30]—a confidence confirmed by a disinterested observer:

> CLECs will be hitting their stride as marketing machines during 1998. ...If 1996 was a year of regulatory maneuvering, and 1997 has been a year of preparation, then 1998 will surely be the first year in which CLECs demonstrate their ability to take market share away in a big way.[31]

The CLEC's ability to take market share from incumbent providers is based, in part, on their offering of sophisticated new services that use these high-capacity facilities,[32] bundled into

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[29] Quality Strategies, pp. 18-19.

[30] For example, the CEO of Intermedia boasted that "CLECs have proven they can easily take market share from incumbents." *Telco Business Report*, December 8, 1997, pp. 1-3.

[31] *Ibid.*

[32] For example, e spire (formerly ASCI), a CLEC operating in the southeastern United States, recently announced a high capacity product, targeted to small to medium business, which in the words of one of its executives is

a complete offering of telecommunications services. The very rationale for acquiring Teleport that AT&T described in the press release from which we have just quoted was to offer its customers one-stop shopping and to lessen its dependence on Bell companies in supplying these services and facilities. There can be no doubt, for example, that AT&T's ability to cut deeply into U S WEST's market share at the wholesale level, by diverting its demand to high-capacity facilities formerly owned by Teleport, is substantially enhanced by its offer of long-distance (e.g., MEGACOM) and local (Digital Link) services that employ high-capacity access. Similarly, MCI WorldCom has clearly stated its intention to migrate access traffic from ILEC networks to its own combined network:

> Part of the rationale for WorldCom's acquiring MCI was that the combined company could meld its networks to create a seamless system for global communications. The largest expense for MCI, as a long-distance carrier, had been fees paid to local phone companies for beginning and ending calls.
>
> MCI WorldCom now wants essentially to eliminate those fees for business customers who use the company for local and long-distance calling. For a conversation or data message that travels exclusively on MCI WorldCom's network, rates could decrease by as much as 35 percent, the company said.[33]

Incidentally, as their emphasis on the importance of one-stop shopping suggests, the CLECs have one great advantage over RBOCs like U S WEST, so long as the latter companies continue to be subject to the prohibition of their offering inter-LATA services—a restriction from which the CLECs are of course free.

"the [RBOCs] worst product nightmare." *Telephony*, April 20, 1998, p. 7. While e spire is not operating in Seattle, the types of products that will be successful in the market are likely to be similar across regions. Successful introduction of a new product by a CLEC in one region can be expected to be imitated by other CLECs in other regions.

[33] Seth Schiesel, "FCC Blocks Two Bells on Long-Distance Entry," *The New York Times, September 29, 1998.*

3. Supply Elasticity

The analysis of supply elasticity involves an appraisal of (1) the capability of current competitors that are considered nondominant to expand operations to take market share from the incumbent carrier and (2) the presence or absence of entry barriers.[34]

a. Ability of existing CLECs to expand

The best indicator of the ability of existing CLECs to expand is the fact that they have in fact done so tremendously, both in Seattle, as we have already described, and nationwide, as we will describe in the next section. The market itself has demonstrated that it is indeed economically feasible for these firms to capture business, both new and current, if U S WEST's performance fails to meet competitive standards.

The question: if customers wanted to shift from U S WEST in response to a price increase, would existing CLECs find it economical to serve them?—can also be answered hypothetically. The study performed by PEI provides two measures that shed light on that question. First, on the basis of PEI's estimates of the capacities of existing backbone networks, we calculate that the four facilities-based Seattle CLECs have more than *three times* the capacity needed to accommodate the current demand for U S WEST's high-capacity services.[35] Further editorial commentary on the significance of this finding for the question of U S WEST's "dominance" would surely be superfluous.

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[34] AT&T nondominance order, par. 57. The FCC focused on the first of these in its decision, apparently because it considered the capacity of the existing competitors alone sufficient.

[35] PEI, p. 18.

Of course, customers would have to be linked to one or another of those backbone networks if a CLEC were to serve them. To this end, PEI performed a detailed study of the cost of providing that linkage to U S WEST's customers, at successive distances from the CLEC facilities.[36] It revealed that about 60 percent of U S WEST's high-capacity customer locations are within 1,000 feet (under 0.2 miles) of a CLEC network (44 percent are within 500 feet) and to make such connections to all these customers would require an investment of $46 million and would take no more than two years. To serve all locations within 9,000 feet of CLEC networks—which would embrace 97 percent of U S WEST's volume of business[37]—would require a total of $110 million and no more than three years.

To put these estimates into perspective, we observe that U S WEST's present high-capacity customers generate about $52 million of revenue annually in direct charges for the high-capacity facilities—in effect, for the "dial tone" alone. This means that the investment necessary to capture all that current business would be about 2.2 times revenues—a multiple markedly lower than U S WEST's present investment to revenue multiple of 3.4 for the state of Washington.[38] Under plausible assumptions, the investment ratios required for CLECs to reach customers located within 1,000 feet of their present networks would be even more favorable.[39]

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[36] The cost model developed by PEI is described in detail in its report: it identified routes between customers and the CLEC networks and then estimated the cost of providing fiber optic cable, the associated support structures and electronics over them.

[37] See footnote 9, above.

[38] ARMIS data disclose investment (total plant in service) of about $4.54 billion and revenues of about $1.35 billion in 1996.

[39] Almost 60 percent of all locations using U S WEST's high-capacity facilities are within 1,000 feet of CLEC backbone networks. These locations account for approximately 67 percent of U S West's high-capacity volume (i.e., in terms of DS-1 equivalents). In fact, 61 percent of U S WEST's high-capacity volume is within *100 feet* of CLEC backbones.

The relevance of these ratios—of total revenues to total requisite investment—depends of course on whether they are descriptive of the more realistic scenario, in which the CLECs gradually extend their facilities to take an increasing share of the market. The relevant ratio, in short, is of investment to the revenue from the customers that the CLECs actually succeed in serving. In other words, these overall investment-to-revenue comparisons do not directly tell us whether the existing CLECs would find it economic to make the investment necessary to take over such business as they succeed in capturing. In reality, they would most likely expand selectively, in an attempt to target high volume/low cost locations. Such targeting would involve serving less than the total volume considered in PEI's calculations, thereby sacrificing some economies of scale and density—that is, the ratio of the requisite investment to the business actually captured would be higher than the 2.2 we cited above.[40] For example, if CLECs captured only one-half of the volumes at U S WEST's existing locations, the investment to cost ratio for locations within 1,000 feet would be 2.5.[41]

On the other hand, focusing on scale economies sacrificed by targeting customers can only understate the attractiveness of CLECs serving current U S WEST locations, for two reasons. First, because the high-capacity market is growing, there will be economies of scale in serving demand captured from U S WEST together with incremental demand. Second, it is

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[40] In particular, PEI's study implies three types of scale economies. First, there are cost savings when support structures such as poles and trenches can be shared among several locations. Second, the fiber cable itself is a fixed cost for each location, because the same fiber can serve all volumes in the relevant range. Third, there are economies of scale in the electronics, i.e., electronic costs increase less than proportionately as additional volume is added at a location.

[41] We chose the 50 percent assumption on the basis of the observation that CLECs are now capturing about one-half of new volumes. Our ratio assumes that their share would be spread evenly over all locations, so that CLECs would still have to build facilities to all of them.

important to recognize that the foregoing revenue figures are the payments by subscribers for the use of the high-capacity facilities only: they are equivalent to the flat monthly fee for "dial tone" service alone. As such, they do not account for the fact that competition is increasingly for packages of services: access to a customer becomes the vehicle for selling services with even higher margins. Taking these net revenues into account would make the comparison of the required investment in high-capacity facilities to the total revenues it would produce markedly more favorable than is suggested by our previous calculations.

An important component of the elasticity of supply is the timeliness with which current competitors can expand their facilities to meet new demand. In this connection, the estimate that CLECs can serve the 60 percent of current U S WEST-served locations that are within 1,000 feet of their networks in 18 to 24 months is very significant. This two year horizon is consistent with the time frame envisioned in the *Merger Guidelines* in determining whether prospective new investments should be counted as a competitive constraint on the pricing behavior of firms contemplating a merger.[42]

Even though taking on customers beyond 1,000 feet would require additional time, the CLECs' ability to do so is competitively significant. As the FCC correctly observed in its AT&T nondominance order,

> The issue, however, is not whether Sprint and MCI could and should expand their networks so they can serve all of AT&T's customers within a short time frame. Rather, the issue is whether, in the short term, Sprint and MCI have sufficient available excess capacity to add a significant number of new customers. The evidence shows that Sprint and MCI can add significant

[42] *Merger Guidelines*, par. 3.2.

> numbers of new customers with their existing capacity and add incrementally to this capacity as new customers are added to their networks.[43]

Finally, AT&T's words at the completion of its acquisition of Teleport provide some real-world market perspective on this issue:

> TCG has more fiber route miles and serves more businesses in more cities than any other competitive local service company," Armstrong said. "The strategic value of this merger...positions AT&T for growth and undisputed leadership in three of the fastest growing segments of the communications services industry–consumer, business and wholesale networking services.
>
> TCG, with more than 10,000 miles of fiber optic cable and 50 local switches, is the nation's premier provider of competitive communications services. Its network encompasses more than 300 communities coast to coast. Armstrong said that AT&T also pledges to devote substantial resources to continue the building of facilities in critical markets.

In a sense, the foregoing exercise was superfluous: the most powerful evidence of the elasticity of competitive supply is that U S WEST's challengers have in fact taken over 27 percent of the wholesale market for these services in Seattle, using their own facilities—a share that is growing rapidly—not to mention their 80 percent of the retail market!

b. Barriers to entry

By the same token, the impressive growth of CLECs demonstrates that barriers to local exchange entry are obviously not prohibitive.[44] Although high-capacity entry came later to Seattle than other metropolitan areas, CLECs there appear to be catching up to the pace

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[43] Par. 60. The FCC also concluded that resellers could expand capacity in response to supracompetitive pricing by AT&T (par. 62)

[44] Although much of the available data on CLEC growth is at the national level and for all local exchange services, it is clear that these firms are focusing on high capacity services. For example, Heather Gold reported that the CLECs had created "the nation's first digital local networks...in direct response to increased customer needs for broadband capabilities and advanced telecommunications solutions," *op .cit.*

elsewhere. According to Quality Strategies, two CLECs entered in 1993 (ELI and TCG), MFS in 1994, and MCI in 1996.[45]

Nationally, there has been tremendous growth in the number and size of CLECs. Currently, there are over 100 of them[46] and they are adding customers at an impressive rate. For example, Salomon Smith Barney reported that CLECs added 75,000 new business lines in the fourth quarter of 1996—sixty-four percent of that total by the "Big 2" (TCG and MFS), 20 percent by 12 other smaller, explicitly identified carriers, and the other 16 percent by an unidentified group. By the first quarter of 1998, the total CLEC volume of new lines had increased to about 500,000—actually a greater number than the ILECs added during that quarter—with the "Big 2" accounting for only one-third, the next 12 for 50 percent, and the remaining small LECs for the remaining one-sixth[47]—testifying to a marked decrease in concentration even among these challengers of the ILECs. Clearly, the market opportunities for CLECs are not only expanding but expanding disproportionately rapidly for the newer entrants among them.

Similarly, CLECs are having no trouble attracting large amounts of capital. These funds have come both from other carriers, in the form of acquisitions, and from the capital market. As for the former: over the past two years, WorldCom acquired two CLECs, MFS and Brooks, for a combined price of $16.4 billion—an amount almost identical to what SBC paid to acquire Pacific Telesis. In the first half of this year alone, AT&T has acquired TCG at a cost of

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[45] Quality Strategies, p. 20.

[46] Heather Gold, *op. cit.*

[47] Salomon Smith Barney, *op. cit.*

$11 billion and recently announced its intent to acquire TCI at a cost of $48 billion. As to the latter: in the two years since the passage of the Telecommunications Act in 1996, CLECs have raised $14 billion of outside capital,[48] a total that compares impressively with total annual investment by the ILECs has been about $19 billion.[49] The over $14 billion, —over a period of less than two years since the passage of the 1996 Act was six times the amount of capital raised by the CLECs in the four years before its passage.[50]

4. Cost Structure

In its AT&T nondominance order, the FCC was concerned that AT&T's size relative to other carriers might give it a significant advantage in terms of scale economies and access to capital. The same question must be raised in the present context. The record we have already summarized supplies the definitive answer: investors are obviously satisfied that incumbents do not enjoy advantages sufficient to make continuing—indeed growing—investment in CLECs unattractive.

What is both highly satisfying from the standpoint of consumers and reassuring about the continued feasibility and vitality of competitive entry is the fact that this rapid recent expansion of the CLECs has occurred at the same time as the charges by incumbents for high capacity services have declined substantially. When the first CLECs entered in the mid- to late 1980s, these prices were over twice their current levels.[51] That CLEC activity is accelerating at

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[48] Statement of Heather Gold, *op. cit.*

[49] Calculated from data reported in the FCC's *Statistics of Communications Common Carriers.*

[50] Heather Gold, *op. cit.*

[51] For example, U S WEST's rates for DS-1 capacity fell by 58 percent between the beginning of 1989 and the middle of 1998.